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<b>PETITION FEE</b> Under 37 CFR 1.17(f), (g) & (h) <b>TRANSMITTAL</b> (Fees are subject to annual revision) Send completed form to: Commissioner for Patents P.O. Box 1450, Alexandria, VA 22313-1450	<b>Application Number</b>	<b>10/669,325</b>
	<b>Filing Date</b>	<b>September 25, 2003</b>
	<b>First Named Inventor</b>	<b>Naoki WATANABE</b>
	<b>Art Unit</b>	
	<b>Examiner Name</b>	
	<b>Attorney Docket Number</b>	<b>500.43155X00</b>

Enclosed is a petition filed under 37 CFR §1.102(d) that requires a processing fee (37 CFR 1.17(f), (g), or (h)). Payment of \$ 130.00 is enclosed.

This form should be included with the above-mentioned petition and faxed or mailed to the Office using the appropriate Mail Stop (e.g., Mail Stop Petition), if applicable. For transmittal of processing fees under 37 CFR 1.17(i), see form PTO/SB/17i.


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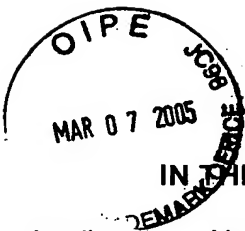
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<b>Petition Fees under 37 CFR 1.17(f):</b> For petitions filed under: § 1.53(e) - to accord a filing date. § 1.57(a) - to according a filing date. § 1.182 - for decision on a question not specifically provided for. § 1.183 - to suspend the rules. § 1.378(e) for reconsideration of decision on petition refusing to accept delayed payment of maintenance fee in an expired patent. § 1.741(b) - to accord a filing date to an application under §1.740 for extension of a patent term.	<b>Fee \$400</b>	<b>Fee Code 1462</b>
<b>Petition Fees under 37 CFR 1.17(g):</b> For petitions filed under: §1.12 - for access to an assignment record. §1.14 - for access to an application. §1.47 - for filing by other than all the inventors or a person not the inventor. §1.59 - for expungement of information. §1.103(a) - to suspend action in an application. §1.136(b) - for review of a request for extension of time when the provisions of section 1.136(a) are not available. §1.295 - for review of refusal to publish a statutory invention registration. §1.296 - to withdraw a request for publication of a statutory invention registration filed on or after the date the notice of intent to publish issued. §1.377 - for review of decision refusing to accept and record payment of a maintenance fee filed prior to expiration of a patent. §1.550(c) - for patent owner requests for extension of time in <u>ex parte</u> reexamination proceedings. §1.956 - for patent owner requests for extension of time in <u>inter partes</u> reexamination proceedings. § 5.12 - for expedited handling of a foreign filing license. § 5.15 - for changing the scope of a license. § 5.25 - for retroactive license.	<b>Fee \$200</b>	<b>Fee code 1463</b>
<b>Petition Fees under 37 CFR 1.17(h):</b> For petitions filed under: §1.19(g) - to request documents in a form other than that provided in this part. §1.84 - for accepting color drawings or photographs. §1.91 - for entry of a model or exhibit. §1.102(d) - to make an application special. §1.138(c) - to expressly abandon an application to avoid publication. §1.313 - to withdraw an application from issue. §1.314 - to defer issuance of a patent.	<b>Fee \$130</b>	<b>Fee Code 1464</b>

<b>Name (Print/Type)</b>	<b>Carl L. Brundidge</b>	<b>Registration No. (Attorney/Agent)</b>	<b>29,621</b>
<b>Signature</b>		<b>Date</b>	<b>March 7, 2005</b>

This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.



500.43155X00

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicants: Naoki WATANABE

Serial No.: 10/669,325

Filed: September 25, 2003

For: REMOTE COPY SYSTEM

**PETITION TO MAKE SPECIAL  
UNDER 37 CFR 1.102(d) and MPEP. §708.02, VIII**

**MS Petition**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

March 7, 2005

Sir:

**1. Petition**

Applicants hereby petition to make this application **Special**, in accordance with 37 CFR §1.102(d) and MPEP 708.02, VIII. The present invention is a new application filed in the United States Patent and Trademark Office on September 25, 2003 and as such has not received any examination by the Examiner.

**2. Claims**

Applicants hereby represent that all the claims in the present application are directed to a single invention. If upon examination it is determined that all the claims presented are not directed to a single invention, Applicants will make an election without traverse as a prerequisite to the granting of special status.

### **3. Search**

Applicants hereby submit that a pre-examination search has been made by a professional searcher.

The field of search covered:

<u>Class</u>	<u>Subclasses</u>
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707	204
711	161, 162
714	6

We conducted our initial search using the US Patent Office's Examiner Application Search Tool (EAST) database and image retrieval system. The EAST database contains images of all issued US patents and published US patent applications searchable by subclass or document number. The EAST database also includes: the searchable full text of US patents issued since 1971; the searchable full text of all US published patent applications; and the searchable abstracts of a large number of patents and patent applications from the European and Japanese Patent Offices.

### **4. Copy of References**

A listing of all references found by the professional searcher is provided by a Form PTO-1449 and copies of the references and the Form PTO-1449 are submitted as part of an Information Disclosure Statement (IDS) filed on even date.

### **5. Detailed Discussion of the References and Distinctions Between the References and the Claims**

Below is a discussion of the references uncovered by the search and cited in the IDS filed on even date that appear to be most closely related to the subject

matter encompassed by the claims of the present application, and which discussion particularly points out how Applicants' claimed subject matter is distinguishable over those references. All other references uncovered by the search and cited in the IDS filed on even date are **not** treated in detail herein.

**a. Detailed Discussion of the References**

Milillo (U.S. Patent No. 6,457,109) shows a method of copying data from a first storage system to a second storage system via an intermediate storage device. When the primary storage receives a write command, data is transferred to the intermediate volume using an internal snapshot, after which the data is transferred from the intermediate storage device to the second storage device. (See, e.g., Abstract, Figure 3, and Column 5, line 57 Column 6, line 9).

However, unlike the present invention, Milillo does not teach or suggest any address information and does not include controllers in each of the storage devices as recited in the claims. More particularly, Milillo does not teach or suggest the interconnection of the first, second and third storage unit systems, the function of the first controller of the first storage unit system when responding to a write request for a computer to transmit to the third storage unit system a journal including write data and an address of the write data and a function of the second controller of the second storage unit system when responding to control information from the first controller that includes a storage position of the journal as recited in each of the claims.

Parks (U.S. 6,598,174) shows a method of migrating data from a first storage device to a second storage device via an intermediate device. The transferring of

data includes the setting of a parameter indicating the size and location of the data set stored in the first storage device, generating a request to copy the data from the first storage device to a buffer in the intermediate device, and generating a request to transfer the data from the buffer in the intermediate device to the secondary storage. (See, e.g., Abstract, Figures, and Column 17, line 58 - Column 18, line 50).

However, unlike the present invention, Parks show a host computer connected to the intermediate device and not to the primary storage unit. Also, no controllers are present in either of the storage devices as recited in the claims. More particularly, Parks does not teach or suggest the interconnection of the first, second and third storage unit systems, the function of the first controller of the first storage unit system when responding to a write request for a computer to transmit to the third storage unit system a journal including write data and an address of the write data and a function of the second controller of the second storage unit system when responding to control information from the first controller that includes a storage position of the journal as recited in each of the claims.

Oliveira (U.S. 6,766,359) shows a data transfer system between a first computer and a second computer via a shared data storage wherein the data storage includes an index directory that provides indication of what data is stored in its cache and the address of that data in the cache memory. (See, e.g., Abstract, Figures, and Column 6, lines 14-29).

However, unlike the present invention, Oliveira does not teach the use of separate controllers, and of the journal data including both the data and the address information as recited in the claims. More particularly, Oliveira does not teach or suggest the interconnection of the first, second and third storage unit systems, the

function of the first controller of the first storage unit system when responding to a write request for a computer to transmit to the third storage unit system a journal including write data and an address of the write data and a function of the second controller of the second storage unit system when responding to control information from the first controller that includes a storage position of the journal as recited in each of the claims.

Dysert (U.S. 6,804,690) shows a method for physical backup from a host system to a backup system based on mapping information that includes the storage locations of the data in the storage system. The host is connected to a local storage system including two mirrored disk volumes that are in turn connected to the backup system. (See, e.g., Abstract, Figures 1-3, Column 4, lines 35-57, and Column 7, line 4 - Column 8, line 23).

However, unlike the present invention, Dysert does not show the storage devices including controllers as recited in the claims. More particularly, Dysert does not teach or suggest the interconnection of the first, second and third storage unit systems, the function of the first controller of the first storage unit system when responding to a write request for a computer to transmit to the third storage unit system a journal including write data and an address of the write data and a function of the second controller of the second storage unit system when responding to control information from the first controller that includes a storage position of the journal as recited in each of the claims.

Watanabe (U.S. Patent Application Publication 2002-0144070) shows a copying method between a first storage disk and a second storage disk via an intermediate logical disk. The copy instructions include mentioning of the copy data

regions. (See, e.g., Abstract and Figures 1 and 2).

However, unlike the present invention, the storage devices disclosed by Watanabe do not have separate controllers, and the address information is not sent from the first storage device to the second storage device as recited in the claims. More particularly, Watanabe does not teach or suggest the interconnection of the first, second and third storage unit systems, the function of the first controller of the first storage unit system when responding to a write request for a computer to transmit to the third storage unit system a journal including write data and an address of the write data and a function of the second controller of the second storage unit system when responding to control information from the first controller that includes a storage position of the journal as recited in each of the claims.

Nakano (U.S. Patent Application Publication No. 2003-0051111) discloses a remote copy control method including three data centers connected to each other, each of the data centers including controllers. The first two data centers are located in the vicinity of each other and use synchronous data transfers, while the third' data center is located remotely and uses asynchronous data transfer. The data to be updated is received from a host connected to the first data center. The position information of the data to be transmitted is stored in the first data center, so that it can be used by the third data center. When the controller of the first data center has completed the transfer of the data to the second data center, it sends a response to the third data center, including address information, based on which the third data center receives and stores the data. (See, e.g., Abstract, Figures 1, 3, 8, 9, and Paragraphs [158-167]).

Thus, Nakano does not teach or suggest the features of the present invention

as recited in the claims, in which a journal including address information is sent to the third storage unit from the first storage unit, so that the controller in the second storage unit receives a storage position of the journal, and acquires the journal from the third storage unit.

Day (U.S. Patent Application Publication No. 2004/0034808) shows a mirror copy system including a primary storage with a primary controller, a secondary storage with a secondary controller, and an intermediate system connected to the primary and secondary storage units. The first storage unit receives a write request from a connected host, writes the data to the primary storage, and synchronously transfers the data to the intermediate system. The intermediate storage manager buffers the data and indicates the track in the primary storage subject to the update. Upon completion, the primary controller returns a response to the host. In response to an update from the intermediate system, the secondary storage manager asynchronously transfers the data to the secondary storage, and returns an acknowledgment to the intermediate site. (See, e.g., Abstract, Figures 1 and 2, and Paragraphs [22-24]).

However, unlike the present invention, Day does not include a controller in the intermediate site and does not teach the concept of the journal being sent from the intermediate storage to the secondary storage including storage position as recited in the claims. More particularly, Day does not teach or suggest the interconnection of the first, second and third storage unit systems, the function of the first controller of the first storage unit system when responding to a write request for a computer to transmit to the third storage unit system a journal including write data and an address of the write data and a function of the second controller of the second



storage unit system when responding to control information from the first controller that includes a storage position of the journal as recited in each of the claims.

Takeda (U.S. Patent Application Publication No. 2004/0172509) shows a data replicating system between a first storage system and a second storage system wherein journal processing is included in the method. The journal processing includes copying of the data as well as storing an address to the corresponding data. (See, e.g., Abstract, Figures, and Paragraphs [35 and 59]).

However, unlike the present invention, in Takeda no intermediate storage is provided to transfer the data and address information between the first and second storage systems as recited in the claims. More particularly, Takeda does not teach or suggest the interconnection of the first, second and third storage unit systems, the function of the first controller of the first storage unit system when responding to a write request for a computer to transmit to the third storage unit system a journal including write data and an address of the write data and a function of the second controller of the second storage unit system when responding to control information from the first controller that includes a storage position of the journal as recited in each of the claims.

Gagne (U.S. Patent Application Publication No. 2004/0193660) discloses a method of cascading data through a data storage facility including a local storage device, a first remote storage device, and a second remote storage device. (See, e.g., Abstract, Figures, and Paragraphs [25-32]).

Unlike the present invention, Gagne does not include a controller in the local storage and the second storage device, nor do they use address information in the transferring of data as recited in the claims. More particularly, Gagne does not teach

or suggest the interconnection of the first, second and third storage unit systems, the function of the first controller of the first storage unit system when responding to a write request for a computer to transmit to the third storage unit system a journal including write data and an address of the write data and a function of the second controller of the second storage unit system when responding to control information from the first controller that includes a storage position of the journal as recited in each of the claims.

**b. Distinctions Between the References and the Claims**

The present invention as recited in the claims is not taught or suggested by any of the above noted references whether taken individually or in combination with each other or in combination with any of the other references now of record.

The present invention as recited in the claims is directed to a system including first, second and third storage unit systems which implement a remote copy function and a remote copy method for use in a system including the first, second and third storage unit systems.

Each of the claims recite at least a first feature of the first storage unit system being connected to a computer and having a first disk device and a first controller, the second storage unit system having a second disk device and a second controller and the third storage unit system being connected to the first and second storage unit systems and having a third disk device and a third controller.

Further, each of the claims recite at least a second feature where the first controller responds to a write request received from the computer to transmit to the third storage unit system a journal including write data received from the computer

and address information indicative of a position at which the write data is written, stores the write data in the first disk device and returns a response to the write request to the second computer after transmitting the journal.

Still further, each of the claims recite at least a third feature where the second controller receives first controller information issued by the first controller and including a storage position of the journal used when the second storage unit acquires the journal, acquires the journal from the third storage unit based on the first controller information and stores the write data in the second disk device based on the address information included in the journal.

The above described first, second and third features are not taught or suggested by any of the above described references or any of the other references of record whether taken individually or in combination with each other. Attention is directed to the discussion of the references as provided above in the "Detailed Discussion of the References" section wherein the teachings of each reference along with the deficiencies of such teachings relative to the features of the present invention as recited in the claims. Accordingly, the above described first, second and third features of the present invention as recited in the claims are not taught or suggested by Milillo, Parks, Oliveira, Dysert, Watanabe, Nakano, Takeda and Gagne whether taken individually or in combination with each other as recited in the claims.

Therefore, since the above described references and the other references of record fail to teach or suggest the above described first, second and third features recited in each of the claims, it is submitted that all of the claims are patentable over the above described references and the other references of record.

**6. CONCLUSION**

Applicant has conducted what it believes to be a reasonable search, but makes no representation that "better" or more relevant prior art does not exist. The United States Patent and Trademark Office is urged to conduct its own complete search of the prior art, and to thoroughly examine this application in view of the prior art cited herein and any other prior art that the United States Patent and Trademark Office may locate in its own independent search. Further, while Applicant has identified in good faith certain portions of each of the references listed herein in order to provide the requisite detailed discussion of how the claimed subject matter is patentable over the references, the United States Patent and Trademark Office should not limit its review to the identified portions but rather, is urged to review and consider the entirety of each reference, and not to rely solely on the identified portions when examining this application.

In view of the foregoing, Applicant requests that this Petition to Make Special be granted and that the application undergo the accelerated examination procedure set forth in MPEP 708.02 VIII.

**7. Fee (37 C.F.R. 1.17(i))**

The fee required by 37 C.F.R. § 1.17(i) is to be paid by:

☒ the Credit Card Payment Form (attached) for \$130.00.

☐ charging Account \_\_\_\_\_ the sum of \$130.00.

A duplicate of this petition is attached.

Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, or credit any overpayment of fees, to the deposit account of MATTINGLY, STANGER, MALUR & BRUNDIDGE, P.C., Deposit Account No. 50-1417 (500.43155X00).

Respectfully submitted,

MATTINGLY, STANGER, MALUR & BRUNDIDGE, P.C.



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Carl I. Brundidge  
Registration No. 29,621

CIB/jdc  
Enclosures  
(703) 684-1120